

Cypress™

Cypress Tech Talk

December 4, 2018



MITRE

The Office of the National Coordinator for
Health Information Technology



Agenda

- Software Updates
 - Cypress Validation Utility + Calculation Check (CVU+)
 - Evolving Electronic Clinical Quality Measure (eCQM) Standards—
Quality Data Model (QDM) vs Clinical Quality Language (CQL)
Timing
- Recent Issues
 - CYPRESS-1525: Patient Characteristic Sex in Record Sample
 - CYPRESS-1537: “relatedTo” attribute in Record Sample
- Cypress Versions
- Open Discussion
- Contact Information

Software Updates

Introducing, CVU + Calculation Check

- **Cypress v5 will include a new feature named the Cypress Validation Utility + Calculation Check (CVU+)**
- **This feature seeks to address the vendor concern that the ‘certification process does not mirror a production scenario for electronic Clinical Quality Measure (eCQM) reporting’**
 - Certification uses a constrained set of test patients
 - Certification does not enforce reporting program requirements (i.e., CMS Implementation Guide)
- **CVU+ will supplement the existing certification program**
 - Use of CVU+ is not currently a requirement of the program

Software Updates

CVU + Calculation Check – Features

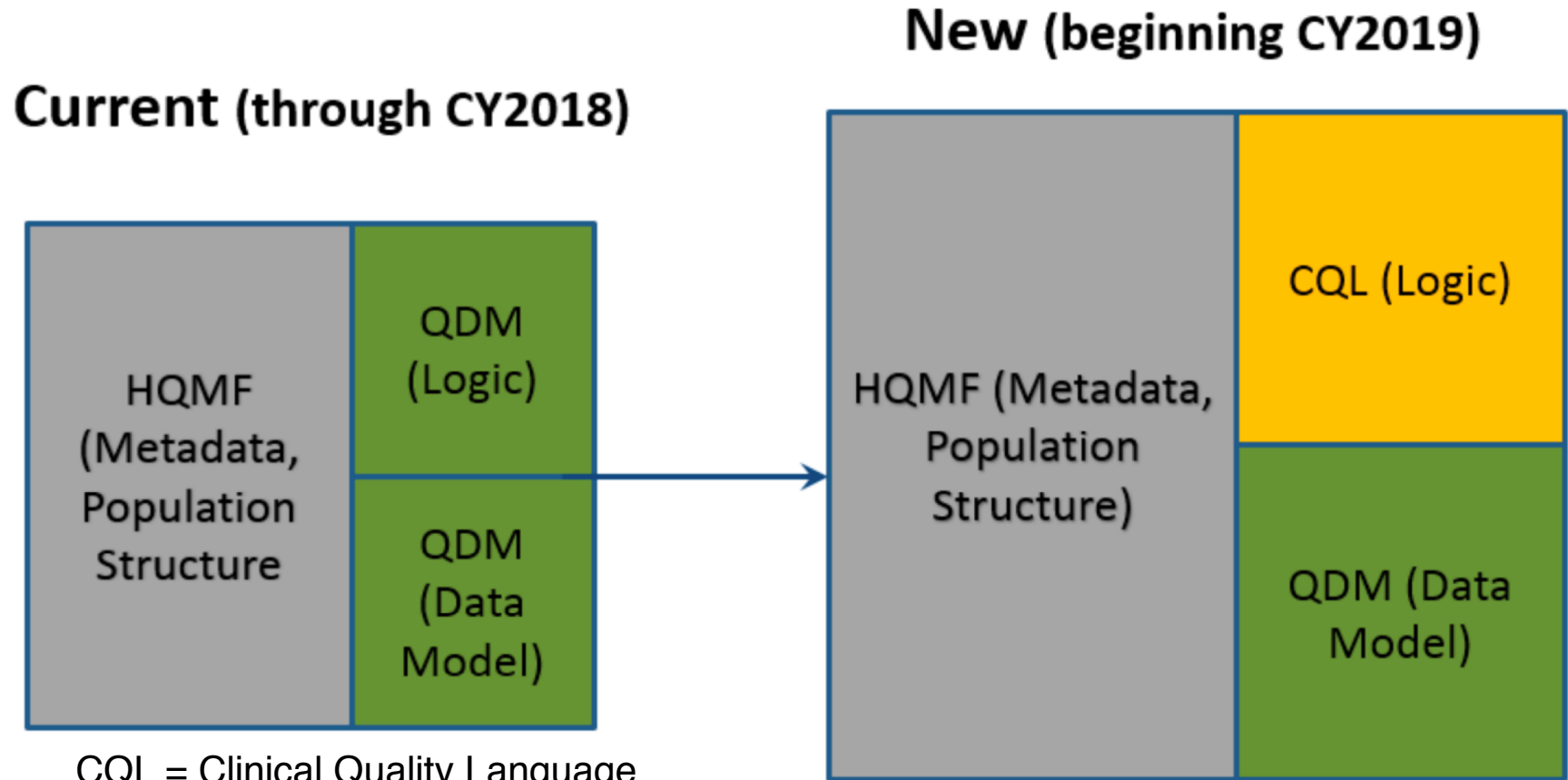
- **Enhanced verification of a Health Information Technology (IT) system's eCQM calculations**
 - Using a combination of Cypress defined patients, and “bring your own” patients
 - Calculation for multiple eCQMs at once
- **Verification of a Health IT system's ability to be configured (by a provider) to report to CMS programs**
 - CVU+ will test conformance with program specific requirements in the CMS Quality Reporting Document Architecture (QRDA) Implementation Guides

Software Updates

CVU + Calculation Check – Seeking Input

- **Cypress plans to begin development of the CVU+ this fall for preliminary release in Spring 2019**
 - Final release in Summer 2019 with Cypress v5
- **Seeking input for features to be included with CVU+**
- **Continued discussion at future Tech Talks**

Evolving eCQM Standards—QDM vs CQL Timing



CQL = Clinical Quality Language

QDM = Quality Data Model

HQMF = Health Quality Measure Format

Software Updates

Instant Granularity

- **A CQL instant (calendar date/date + time of day) can contain varying levels of precision**
 - Instant I1: 2012
 - Instant I2: 2012-03
 - Instant I3: 2012-03-10
 - Instant I4: 2012-03-10 22
 - Instant I5: 2012-03-10 22:05
 - Instant I6: 2012-03-10 22:05:09
- **In QDM, instants must support at least “minute”-level precision**
- **CQL instants have a maximum precision of milliseconds**

Software Updates

Comparing Instants

- **Both CQL and QDM support comparison of instants**
 - Is one before or after the other?
- **CQL and QDM handle “unknown” instants differently**
- **In QDM, an instant being “null” results in the comparison being “false”**
 - `DateTime(2015,2,5) Ends Before Start Of null`
 - “False” in this case means that February 5, 2015 ends before start of “null”, which is not true
- **In CQL, if one is “null” (unknown), the result is also “null”**
 - `DateTime(2015,2,5) < null`
 - Returns “null”

Software Updates

Managing Uncertainty

- CQL can compare instants even when data is partially missing
- If the missing data doesn't affect the comparison, the answer is returned
- **`DateTime(2012) < DateTime(2014, 2, 15)`**
 - True
- **`DateTime(2015) < DateTime(2014, 2, 15)`**
 - False
- **`DateTime(2014) < DateTime(2014, 2, 15)`**
 - Null

Software Updates

Calculating Interval Durations

- **QDM and CQL both count intervals of time in “buckets”; made up of years, which get divided into smaller buckets (months, days, hours, minutes, etc.) as necessary**
 - QDM’s smallest bucket size is 1 minute
 - CQL’s smallest bucket size is 1 millisecond
- **QDM can only calculate “duration” between two instants**
 - In other words, the number of whole bucket units that can fit between two instants
 - duration in months between @2014-01-31 and @2014-04-01
 - 2
 - duration in months between @2014-01-31 and @2014-02-01
 - 0
- **CQL can also calculate “durations”**

Software Updates

Calculating interval differences

- **CQL can also calculate “difference” between two instants**
 - Number of bucket boundaries crossed
 - duration in months between @2014-01-31 and @2014-04-01
 - 3
 - duration in months between @2014-01-31 and @2014-02-01
 - 1
- **QDM does not have this concept of “difference”**

Software Updates

Additional CQL/timing resources

- **ESAC CQL Formatting & Usage Wiki**
 - <https://github.com/esacinc/CQL-Formatting-and-Usage-Wiki/wiki/>
- **Electronic Clinical Quality Improvement (eCQI) Resource Center “CQL Q&As”**
 - <https://ecqi.healthit.gov/cql/CQ-Qs%26As>
- **eCQI Resource Center CQL Resources**
 - <https://ecqi.healthit.gov/cql-clinical-quality-language>
- **ONC/CMS 2018 eCQM Logic and Implementation Guidance**
 - <https://ecqi.healthit.gov/system/files/eCQM-Logic-and-Guidance-2018-0504.pdf>

Software Updates

Bugs addressed in 4.0.1 patch release

Cypress v4.0.1

The Cypress 4.0.1 patch is scheduled for released on 10/11/18. Changelog for the release is below

Cypress Features

- Cypress bundle for the 2019 Reporting/Performance period (eCQM value sets as of September, 2018).
- Support for the 2018 CMS Quality Reporting Document Architecture (QRDA) Category III Implementation Guide.

Cypress Bugs Addressed

- Misrepresentation of ongoing events in HTML. ([CYPRESS-1450](#))
- Calculation of patient Z21 GP Adult for CMS249 does not account for race. ([CYPRESS-1461](#))
- Cypress's relative positioning of the "Negation Reason" in the Device, Order template impacts patient import. ([CYPRESS-1443](#))
- C4 Problem filter not properly excluding patients without required diagnosis. ([CYPRESS-1480](#))
- Duplicate Patients have significantly different date of births, impacting calculation depending on which date of birth is selected. ([CYPRESS-1483](#))
- Master Patient List download does not contain patient files.
- 'Race Condition' in C2 setup may cause the Expected Results to be calculated with a subset of patient records. ([CYPRESS-1488](#))

CYPRESS Issue Tracker / CYPRESS-1453

CMS 68v8 patient w/duplicate episodes counting individually

Details

Type: Bug/Issue Status: **IN PROGRESS**

Priority: **Moderate** Resolution: Unresolved

Labels: **KnownBug4.0.0**

Contact Name: Judi Dorsey

Contact Email: judid@medent.com

Search Save as

labels = KnownBug4.0.0 Search Basic

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Key	Summary	T	Status	Created	Assignee
CYPRESS-1477	Device Order Element structure	o	CLOSED	09/24/18	David Czulada
CYPRESS-1461	Z21 GP Adult race code mismatch, possible miscalculation	o	IN PROGRESS	09/09/18	David Czulada
CYPRESS-1453	CMS 68v8 patient w/duplicate episodes counting individually	o	IN PROGRESS	08/23/18	David Czulada
CYPRESS-1443	Device, Order negation author/time is missing and seems to be causing an issue	o	IN PROGRESS	07/23/18	David Czulada

Cypress v4.0.0, I find a specific patient (Z9 N BH Adult) appears to have . But, upon closer inspection, two of the episodes have the same CPT codes. The only difference I see between the two is the inclusion of a but not the other. Since there is no diagnosis requirement for this as these are duplicated to one another and only counts 4 unique

Recent Issue

CYPRESS-1525: Patient Characteristic Sex in Record Sample

■ Precondition

- A Cypress 4.0.1 instance
- Editing Record Sample Test

■ Issue

- When editing a Record Sample Test Data Criteria list, there are a number of options for replacement data criteria
- If the user selects Patient Characteristic Sex, and saves the test, they receive a Server Error message.

■ Workaround:

- Patient Characteristic Sex is considered too trivial to be included by default in the test
- Vendors and ATLs should not swap Patient Characteristic Sex in, should use any other criteria

The screenshot illustrates the workflow for editing a test in Cypress 4.0.1. It shows the 'Edit Test' button, the 'Swan Criteria' dropdown menu with 'Patient Characteristic Sex: ONCAdministrativeSex' selected, and the 'Save' button. Below the 'Save' button, a 'Server Error' message is displayed, indicating a problem with the request. The error message includes links for 'Go To Dashboard' and 'Report bug'.

Recent Issue

CYPRESS-1537: “relatedTo” attribute in Record Sample

■ Precondition

- A Cypress 4.0.1 instance
- Measures with “Communication: From Provider To Provider”
 - Uses “relatedTo” attribute
 - Ex: CMS50v7
- “Communication: From Provider To Provider” is randomly selected for test

■ Issue

- Cypress expecting retired “fulfills” template id for the “Communication: From Provider To Provider” attribute “relatedTo”
- “relatedTo” id should be accepted instead

■ Workaround:

- Only necessary if Record Sample Test for CMS50v7 is generated with a “Communication: From Provider To Provider”
- That data criteria should be swapped out for any other available data criteria option
- May reach out to ATL to edit the test and swap this criteria

Edit Test					
CMS50v7 Closing the Referral Loop: Receipt of Specialist Report					
Validated in QRDA	Data Criteria	Section	Required Attributes	Value Set(s)	Recorded
		Valuesets		Consultant Report 2.16.840.1.113883.3.464.1003.121.12.1006	Code
	Communication: From Provider To Provider				
		Attributes	relatedTo • relatedTo		Recorded

Previous version:

9.5 Fulfills (V2)

Fulfills (V2) (urn:hl7ii:2.16.840.1.113883.10.20.24.3.126:2016-08-01)



Cypress should be expecting:

4.2 Related To

```
[sdctc:inFulfillmentOf1: identifier
urn:hl7ii:2.16.840.1.113883.10.20.24.3.150:2017-08-01 (open)]
```

Context in Communication from Provider to Provider:

11. **MAY** contain zero or more [0..*] Related To (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.24.3.150:2017-08-01) (CONF:3343-29118).
Note: QDM Attribute: relatedTo

Figure 26: Communication from Provider to Provider (V4) Example

Cypress Versions

Version	Dates	Measures Supported
V 3.2.3	December 14, 2017	Support for the eQMs for the 2018 Reporting/Performance Period *will be supported alongside Cypress v4
V4.0.1	October 11, 2018	Support for the eQMs for the 2019 Reporting/Performance Period Support for Clinical Quality Language (CQL) calculation

Bundle Version	Dates	Features
2017.0.3	April 24, 2018	Cypress v3 only “Z1 BH Adult” updated for CMS128v6
2017.0.4	September 25, 2018	Cypress v3 only Errata update to fix ‘Download All Patients’ feature when 2017.0.3 and 2017.0.2 are installed simultaneously
2018.0.1	July 26, 2018	Cypress v4 only CQL-based measures released in 2018 for the 2019 reporting year eCQM Value Sets as of 5/4/2018.
2018.1.0	October 11, 2018	Cypress v4 only CQL-based measures released in 2018 for the 2019 reporting year eCQM Value Sets as of 9/17/2018.

OPEN DISCUSSION

Next Cypress Tech Talk

- Tuesday, December 18, 2018 at 1pm ET
- To join online, visit:
<https://meetings.cms.gov/orion/joinmeeting.do?MTID=98271705d4bc4ad148cf1e39d5c7408>
- To join via phone, dial: 1-877-267-1577
- Meeting Number: 998 084 717
- Meeting link, as well as a calendar event file, available at:
 - <https://www.healthit.gov/cypress/techtalks.html>

Notes

- **Completed Webinars will be posted on the Cypress Website on the Timeline Tab**
 - <https://www.healthit.gov/cypress/techtalks.html>
- **Send questions and feedback to the Cypress Talk List at**
 - project-cypress-talk@googlegroups.com
- **Report bugs and issues to the Cypress JIRA at**
 - <https://oncprojecttracking.healthit.gov/support/browse/CYPRESS>